

What is claimed is:

1. A residential gateway for accessing a communication network, comprising:
 - a residential PBX system comprising a central processing unit coupled to a memory area
 - 5 and at least one telephone interface;
 - at least one telephone connected to the residential PBX system via the at least one telephone interface; and
 - an Internet Protocol central station connected to the residential PBX system providing access for the at least one telephone to the communication network.

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2. The residential gateway for accessing a communication network of claim 1, further comprising a wireless connection between the at least one telephone and the residential PBX.

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3. The residential gateway for accessing a communication network of claim 1, further comprising a fiber optical connection between the at least one telephone and the residential PBX.

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4. The residential gateway for accessing a communication network of claim 1, further comprising a hybrid fiber coaxial connection between the at least one telephone and the residential PBX.

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5. The residential gateway for accessing a communication network of claim 1, further comprising a cable connection between the at least one telephone and the residential PBX.

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- The residential gateway for accessing a communication network of claim 1, wherein the at least one telephone comprises an Internet Protocol telephone connected to the residential PBX.

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7. The residential gateway for accessing a communication network of claim 6, wherein the Internet Protocol telephone is connected to the residential PBX by an Internet Protocol telephone interface.

5 8. The residential gateway for accessing a communication network of claim 1, wherein the at least one telephone comprises an analog telephone connected to the residential PBX.

9. The residential gateway for accessing a communication network of claim 8, wherein the analog telephone is connected to the residential PBX by an analog to digital converter.

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10. The residential gateway for accessing a communication network of claim 1, further comprising a computer connected to the residential PBX.

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11. The residential gateway for accessing a communication network of claim 10, wherein the computer is connected to the residential PBX by an Ethernet interface.

12. The residential gateway for accessing a communication network of claim 1, wherein residential PBX is connected to a second residential PBX.

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13. The residential gateway for accessing a communication network of claim 12, wherein the residential PBX is connected to the second residential PBX by an Internet Protocol connection.

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14. The residential gateway for accessing a communication network of claim 12, wherein the memory area comprises a memory buffer area.

15. A residential gateway for accessing a communication network, comprising:

a residential PBX system comprising a central processing unit coupled to a memory area and at least one telephone interface;

at least one Internet Protocol telephone connected to the residential PBX system via the at least one Internet Protocol telephone interface;

5 at least one software application stored in the memory area capable of implementing calling features of the residential PBX system;

 a buffer memory area capable of storing Internet Protocol packets and the central processing unit capable of assembling the Internet Protocol packets enabling the Internet Protocol telephone to transmit and receive telephone calls on the communication network; and

10 a Internet Protocol central station connected to the residential PBX providing access for the at least one Internet Protocol telephone to the communication network.

16. The residential gateway for accessing a communication network of claim 15, wherein the at least one telephone is capable of making a public switched telephone network communication connection to a second telephone.

17. The residential gateway for accessing a communication network of claim 15, wherein the at least one telephone is capable of making a point-to-point connection on the communication network.

20 18. The residential gateway for accessing a communication network of claim 15, wherein the at least one telephone is capable of making a point-to-multi-point connection on the communication network.

25 19. A method for providing calling services on a residential PBX, comprising the steps of:
 determining if an incoming call to a called number has a POTS address, and if so,
 converting the POTS address to an Internet Protocol address;

determining whether the caller desires to access residential PBX calling features and if so, implementing the residential PBX calling features, otherwise routing the incoming call to the Internet Protocol address; and

5 determining if the called number has residential PBX calling features engaged, and if so, routing the incoming call according to the engaged residential PBX calling features.

20. The method according to claim 19, further comprising the step of determining whether the caller has authorization to access the residential PBX calling features.

10 21. The method according to claim 20, further comprising the step of rejecting the caller if the caller does not have authorization to access the residential PBX calling features.

15 22. The method according to claim 21, further comprising the step of allowing the rejected caller to enter another called number after attempting to gain authorization to the residential PBX calling features.

23. The method according to claim 19, further comprising the step of receiving at the residential PBX a calling feature code corresponding to at least one calling feature to be implemented by the residential PBX.

20 24. The method according to claim 23, further comprising the step of allowing the caller to implement additional calling features after implementing a residential PBX calling feature.